Compact Fluorescent Light Bulbs (CFLs)

1. Benefits and usage:

EPA is promoting the switch-out of incandescent bulbs for compact fluorescent bulbs (CFLs) as a way to reduce energy consumption by citizens through the Energy Star Program and its "Change a Light, Change the World" campaign. CFLs present an opportunity to prevent mercury emissions from entering the environment by reducing the demand for electricity generated by coal-fired power plants. Utility power plants are the primary man-made source for mercury in the environment, accounting for approximately 40% of the mercury emissions in the U.S.

On its "Frequently Asked Questions" (FAQs) web site for CFLs, EPA states that these bulbs save both energy and money. In support of this statement, EPA reports that CFLs use 2/3 less energy than the standard incandescent light bulbs, and last up to 10 times longer. EPA also states that CFLs produce about 70% less heat than their incandescent counterparts, which can result in lower energy costs related to home cooling needs.

> Web links:
> http://www.energystar.gov/index.cfm?c=about.ab_index
> http://www.energystar.gov/index.cfm?c=cfls.pr_cfls
> http://www.energystar.gov/ia/partners/promotions/change_light/downloads/Fact_Sheet_Mercury.pdf

PLEASE NOTE: Some types of CFLs may be incompatible with use on circuits that have a dimmer switch. It may cause serious overheating, particularly if incandescent and CFL lamps are on the same circuit. Check the bulb manufacturer's instructions on lamp packaging for further information and warnings.

2. Mercury issue

CFLs are safe to use in your home. No mercury is released when the bulbs are in use and they pose no danger to you or your family when used properly. CFLs do, however, contain approximately 4 mg of mercury, and thus should be managed responsibly when they burn out. EPA is promoting CFL usage because the reduction in energy needed for these lights can prevent more than 7.5 mg of mercury from being emitted by power plants. Stated differently, a coal-fired power plant will emit 13.6 mg of mercury to produce electricity required to use incandescent bulbs, compared to 3.3 mg of mercury for CFLs.

The use of CFLs can also produce equally positive environmental impacts. A reduced power generation demand can reduce the production of nitrogen oxides which cause smog, prevent the generation of CO_2 which is the gas linked to global warming, and also reduce the emission of other pollutants.

Because of the small amount of mercury in the CFLs, the greatest risk in case a CFL bulb breaks is from the glass shards. EPA states that there is no immediate health risk, and you can minimize any risks by following these proper clean-up and disposal guidelines:

- Sweep up - don't vacuum - all of the glass fragments and fine particles.
- Place broken pieces in a sealed plastic bag and wipe the area with a damp paper towel to pick up any stray shards of glass or fine particles. Put the used paper towel in the plastic bag as well. Dispose of in the trash.
- If the weather allows, open windows to allow the room to ventilate.

Web links:
http://www.epa.gov/epawaste/hazard/tsd/mercury/index.htm

http://www.osha.gov/SLTC/etools/hospital/hazards/mercury/mercury.html

3. Disposal/recycling guidance

Like paint, batteries, thermostats, and other household items, CFLs should be disposed of properly. Do not throw used CFLs away in your household garbage if better disposal options exist! Check directly with your local waste management agency (http://www.deq.virginia.gov/recycle/contactlist.html) on the recycling options and disposal guidelines in your community. If your community offers household hazardous waste collection events, check to see if the event will include CFLs. You can also visit web sites for updated management options for these bulbs. Examples include Earth 911 (www.earth911.org) and the National Electrical Manufacturers Association's lamp division (www.lamprecycle.org). Some retailers may initiate take-back programs in their stores in the future as the sales of the CFLs grow.

If recycling of the CFL bulbs is not an option where you live, EPA recommends the following disposal guidance: place the CFL in a plastic bag and seal it before putting it in your trash. However, EPA also states that you should not dispose of CFLs or any mercury-containing device in your trash if it is destined for a waste incinerator as this increases the risk of mercury emissions to the environment. Ask your local waste management agency on guidance in this situation.

4. Additional information and guidance from the Virginia Department of Environmental Quality:

http://www.deq.virginia.gov/p2/
http://www.deq.virginia.gov/p2/mercury/fluorescents/homepage.html
http://www.deq.virginia.gov/p2/mercury/fluorescents/recyclelamps.html
http://www.deq.virginia.gov/p2/mercury/fluorescents/recycle.html#house
http://www.deq.virginia.gov/waste/fllights.html

http://www.deq.virginia.gov/waste/fllguide.html

Please direct any questions on the proper management of fluorescent bulbs and other mercury-containing devices to:

Steve Frazier	Division of Hazardous Waste	804-698-4199
Steve Coe	Office of Recycling and Litter Prevention	804-698-4029

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